

03.23.07

SPRINKLER

PERMIT

07.805

001326

07.-805. FRSP240 N OAKHURST DR
GEMINI OFFICE
GEMINI OFFICE DEVELOPMENTSESSION - APPLICATION FORM
MAR 23 2007

FOR OFFICIAL USE ONLY

TOTAL FEE

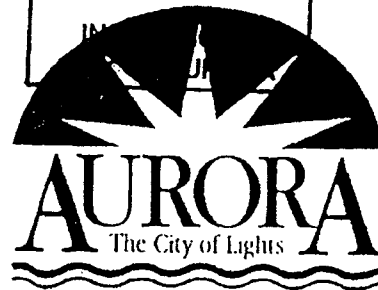
PERMIT APPLICATION NO.

BLDG
PLRV

SUBMITTED

NOTIFIED

ZONING

WEB www.AURORA-il.org
FAX (630) 892-8112
TELEPHONE (630) 892-8088DIVISION OF BUILDING & PERMITS
65 WATER STREET
AURORA, ILLINOIS 60505**LAND / PARCEL INFORMATION**PROPERTY
ADDRESS

240 N OAKHURST DR

IS THIS WORK ASSOCIATED WITH OTHER CONSTRUCTION WORK? ☒ YES ☐ NO

IF YOU ANSWERED YES, PLEASE PROVIDE BUILDING PERMIT NUMBER 06 - 00003529

COUNTY ☐ KANE ☐ DuPAGE TOWNSHIP 11 12 04 TOWNSHIP SECTION #
(CHECK ONE) ☐ KENDALL ☐ WILL (CIRCLE ONE) 14 15 07

(Call tax assessor's office with questions)

03 01

BLOCK # (if known) LOT# (if known)

PROPERTY OWNER &

Contact Name Gemini OFFICE

TENANT &

Contact Name Same

OWNERS ADDRESS

15 WACKER SUITE 800
CHICAGO IL 60606

ADDRESS

PHONE #

FAX #

E-MAIL

PHONE #

FAX #

E-MAIL

**ZONING INFORMATION
OCCUPANCY CLASSIFICATION**

Existing Use / Occupancy

Proposed Use / Occupancy B

☐ Single Occupancy (302.1)☐ Mixed Occupancy (302.3)☐ w/ Incidental use (302.1.1)☐ non-separated☐ w/ Accessory use (302.2)

< 10% of area & < allowable for Acc.

☐ separated attach sum of ratios
calculation per section (504)

Check all Occupancy Classifications that apply below.

Assembly	<input type="checkbox"/> A-1	<input type="checkbox"/> A-2	<input type="checkbox"/> A-3	<input type="checkbox"/> A-4	<input type="checkbox"/> A-5
Business, Education, Factory	<input type="checkbox"/> B	<input type="checkbox"/> E		<input type="checkbox"/> F-1	<input type="checkbox"/> F-2
Hazardous	<input type="checkbox"/> H-1	<input type="checkbox"/> H-2	<input type="checkbox"/> H-3	<input type="checkbox"/> H-4	<input type="checkbox"/> H-5
Institutional	<input type="checkbox"/> I-1	<input type="checkbox"/> I-2	<input type="checkbox"/> I-3	<input type="checkbox"/> I-4	<input type="checkbox"/> I-5
Mercantile, Residential	<input type="checkbox"/> M		<input type="checkbox"/> R-1	<input type="checkbox"/> R-2	
Storage, Utility	<input type="checkbox"/> S-1	<input type="checkbox"/> S-2	<input type="checkbox"/> U		

PROPOSED WORK

New Sprinkler System

221 Hds 0

Relocate Existing Heads

0

Additional Sprinkler work

0

UL 300 Hood Suppression

0

Clean Agent Suppression System

0

Other

0

TOTAL COST OF IMPROVEMENTS \$ 66,000

[FOR SUPPRESSION- PERMIT FEES ARE A FUNCTION OF CONSTRUCTION \$]

001327

Address _____

Application # _____

CONTRACTOR REGISTRATION INFORMATION**SPRINKLER/SUPPRESSION CONTRACTOR**

CITY OF AURORA

G.C. REGISTRATION # 06-3048BUSINESS NAME FE MORAN FIRE PROT.CONTACT NAME DENNIS GREGORASHADDRESS 2165 SHERMER RDCITY, STATE, ZIP NORTHBROOK ILN/A ☐ PHONE (847) 498 - 4870FAX (847) 498 - 9084E-MAIL d.gregorash@fe-moran.com**CERTIFICATION**

This is an application only. Completion of this application does NOT entitle the commencement of construction. I, (the applicant) agree to conform to all applicable laws of the City of Aurora. I also agree that all work performed will be in accordance with the plans and specifications as set forth in the approved permit. I understand that the approval of this application and issuance of a permit does not obviate the need to comply with all applicable laws and ordinances. I agree to hold harmless and indemnify the City of Aurora for any claim against the City as the result of any act of commission or omission by or on behalf of the undersigned, his/her agent, principle, contractor, subcontractor or supplier. I the undersigned am the Owner or a duly contracted representative of the owner of said property.

ELECTRICAL CONTRACTOR (primary contact) ☐

CITY OF AURORA

ELECT. REGISTRATION # _____

BUSINESS NAME _____

CONTACT NAME _____

ADDRESS _____

CITY, STATE, ZIP _____

N/A ☐ PHONE () _____

FAX () _____

E-MAIL _____

CONTRACTOR

PAUL FELCH

(PRINT)

CONTRACTOR

Paul Felch

(SIGNATURE)

OR

OWNER

(PRINT)

OWNER

(SIGNATURE)

PLUMBING CONTRACTOR (primary contact) ☐

CITY OF AURORA

PLUMBING REGISTRATION # _____

BUSINESS NAME _____

CONTACT NAME _____

ADDRESS _____

CITY, STATE, ZIP _____

N/A ☐ PHONE () _____

FAX () _____

E-MAIL _____

MECHANICAL CONTRACTOR (primary contact) ☐

CITY OF AURORA

HVAC REGISTRATION # _____

BUSINESS NAME _____

CONTACT NAME _____

ADDRESS _____

CITY, STATE, ZIP _____

N/A ☐ PHONE () _____

FAX () _____

E-MAIL _____

Address _____ Application # _____

BUILDING INFORMATION**CONSTRUCTION TYPE**

	CIRCLE ONE					CIRCLE ONE
EXISTING	1	2	3	4	5	A B
NEW	1	2	3	4	5	A <u>B</u>

NON Combustible 1 Hr

ACTUAL BUILDING HEIGHT ± 21 FTACTUAL NUMBER OF STORIES 1SF PRINCIPAL 21,777 SF**FIRE PREVENTION INFORMATION**

Sprinklers ☒ WET ☐ DRY

☐ COMPLETE ☐ LIMITED ☐ OTHER

FIRE - WATER SERVICE ☐ EXIST 4" ☐ NEW

FIRE WATER SERVICE SIZE 4" "φ

TYPE OF BACKFLOW PROTECTION DEVICE AMES 3000

FIRE PUMP? ☒ NO ☐ YES

STANDPIPES? ☒ NO ☐ YES

Exhaust HOOD SUPPRESSION ? ☒ NO ☐ YES

INSTALLATION REQUIREMENTS

SPRINKLER SYSTEMS SHALL BE INSTALLED IN ACCORDANCE TO NFPA 13. PER IFC 903.3.1.1 SPRINKLER PLANS SHALL MEET THE REQUIREMENTS OF NFPA 13, CHAPTER 6, 1996 EDITION.

WET CHEMICAL SHALL BE INSTALLED PER NFPA 17A.

DRY CHEMICAL SHALL BE INSTALLED PER NFPA 17.

CARBON DIOXIDE SHALL BE INSTALLED PER NFPA 12.

CLEAN AGENT SYSTEMS SHALL BE INSTALLED PER NFPA 2001.

FOAM SYSTEM SHALL BE INSTALLED PER NFPA 16.

STANDPIPE INSTALLATION MUST MEET REQUIREMENTS OF NFPA 14 AND CITY OF AURORA ORDINANCE 17-110.

Warnings

Print | Home | New Window | Support | Help

Location ID: 65986
Property address: 240 N OAKHURST DR
Parcel Number: 07-20-302-081

Location Special Notes and Information

Trans	Number/Code	Description	Date
BP Open Appl	07-00000746	SIGN PERMIT - SITE - MONUMENT & POLE SIGNS - Status PC	03/22/2007
BP Open Appl	06-00005760	TRAILER PERMIT - Status FI	12/04/2006
BP Open Appl	06-00003529	COR - BUSINESS OFFICES - Status FI	07/27/2006

001330

F.E. MORAN, INC. FIRE PROTECTION
2165 SHERMER RD
NORTHBROOK, IL 60062
(847)498-4870 FAX (847)498-9084

TO: Aurora Fire Dept

DATE: 3/19/07

STREET: 65 Water Street

REFERENCE: Gemini Office
Oakhurst Drive

CITY: Aurora

STATE: IL

ZIP CODE: 60505

FEMFP JOB NO. 3547

ATTENTION: Plan review

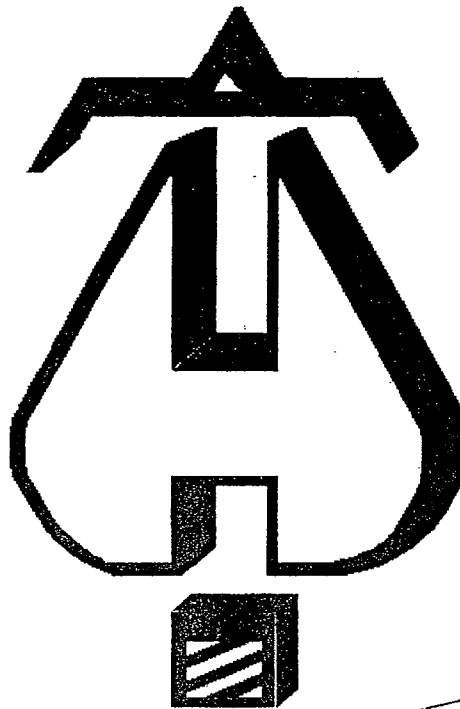
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REMARKS:

D I S T R I B U T I O N	TRANSMITTAL COPIES TO:	SUBMITTAL COPIES TO:	F. E. MORAN, INC. FIRE PROTECTION <i>Dennis Gregorash</i> Dennis Gregorash
	X PROJECT FILE	X PROJECT FILE	
	___ FIELD	___ FIELD	
	___ SALES FILE		

001331

**07.-805. FRSP**

240 N OAKHURST DR
GEMINI OFFICE
GEMINI OFFICE DEVELOPMENT

... Fire Protection by Computer Design

F.E.MORAN FIRE PROTECTION
2265 CARLSON DR.
NORTHBROOK, IL. 60062-6797

PERMIT
COPY

BUILDING & PERMITS

Job Name : GEMINI OFFICE
Building :
Location : Oakhurst Dr. Aurora, IL
System : 1 of 1
Contract : 3547
Data File : gemini.wx1

F.E.MORAN FIRE PROTECTION
GEMINI OFFICE

Page 1
Date 020807

Hydraulic Design Information Sheet

Name - Gemini Office Development Date - 02/09/07
Location - Oakhurst Dr. Aurora, IL
Building - System No. - 1 of 1
Contractor - Krah Construction Contract No. - 3547
Calculated By - J.Gallagher Drawing No. - FP-1
Construction: (X) Combustible () Non-Combustible Ceiling Height - 8' UNO
Occupancy - Medical Office Building

S (X) NFPA 13 (X) Lt. Haz. Ord.Haz.Gp. () 1 () 2 () 3 () Ex.Haz.
Y () NFPA 231 () NFPA 231C () Figure Curve
S Other Design area reduction for quick response sprinklers
T Specific Ruling Made By Date
E

M	Area of Sprinkler Operation	- 1100	System Type	Sprinkler/Nozzle
	Density	- .10	(X) Wet	Make Viking
D	Area Per Sprinkler	- 120	() Dry	Model Concealed
E	Elevation at Highest Outlet	- 16.0	() Deluge	Size 1/2"
S	Hose Allowance - Inside	- 0	() Preaction	K-Factor =EQ01
I	Rack Sprinkler Allowance	- 0	() Other	Temp.Rat.155
G	Hose Allowance - Outside	- 100	VK462	
N				

Note Concealed Pendent quick response

Calculation Flow Required - 237.0 Press Required - 36
Summary C-Factor Used: 120 Overhead 140 Underground

W	Water Flow Test:	Pump Data:	Tank or Reservoir:
A	Date of Test - 06/08/06		Cap. - 0
T	Time of Test - 6:08	Rated Cap.- n/a	Elev.-
E	Static Press - 50	@ Press -	
R	Residual Press - 36	Elev. -	Well
	Flow - 974		Proof Flow
S	Elevation - 0		

U Location - 12" main on Oakhurst Dr. at New York Street

P Source of Information - Aurora Fire Dept.
L
Y

C	Commodity n/a	Class	Location
O	Storage Ht.	Area	Aisle W.
M	Storage Method:	Solid Piled %	Palletized % Rack
M			
S	() Single Row	() Conven. Pallet	() Auto. Storage () Encap.
R	() Double Row	() Slave Pallet	() Solid Shelf () Non
T	() Mult. Row		() Open Shelf
A			
O			
C			
R	Flue Spacing	Clearance:Storage to Ceiling	
K	Longitudinal	Transverse	
A			
G			
E	Horizontal Barriers Provided:		

Pressure / Flow Summary - STANDARD

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Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
D001	8.67	5.6	7.0	na	14.82	0.1	115	7.0
S06	16.66	K = K @ EQ01	7.9	na	15.5			
S07	16.66	K = K @ EQ01	11.05	na	18.32			
S08	16.66	K = K @ EQ01	13.03	na	19.9			
S02	16.66	K = K @ EQ01	7.85	na	15.44			
S03	16.66	K = K @ EQ01	10.97	na	18.26			
S04	16.66	K = K @ EQ01	12.94	na	19.83			
S05	16.66	K = K @ EQ01	7.27	na	14.87			
8	8.67		12.01	na				
9	8.67		15.39	na				
10	8.67		17.52	na				
S01	16.66	K = K @ EQ01	7.22	na	14.82			
1	8.67		11.95	na				
2	8.67		15.31	na				
3	8.67		17.43	na				
4	8.67		22.39	na				
5	8.67		22.52	na				
6	8.67		25.46	na				
7	8.67		26.27	na				
BASE	0.0		33.51	na	100.0			
TEST	0.0		36.13	na				

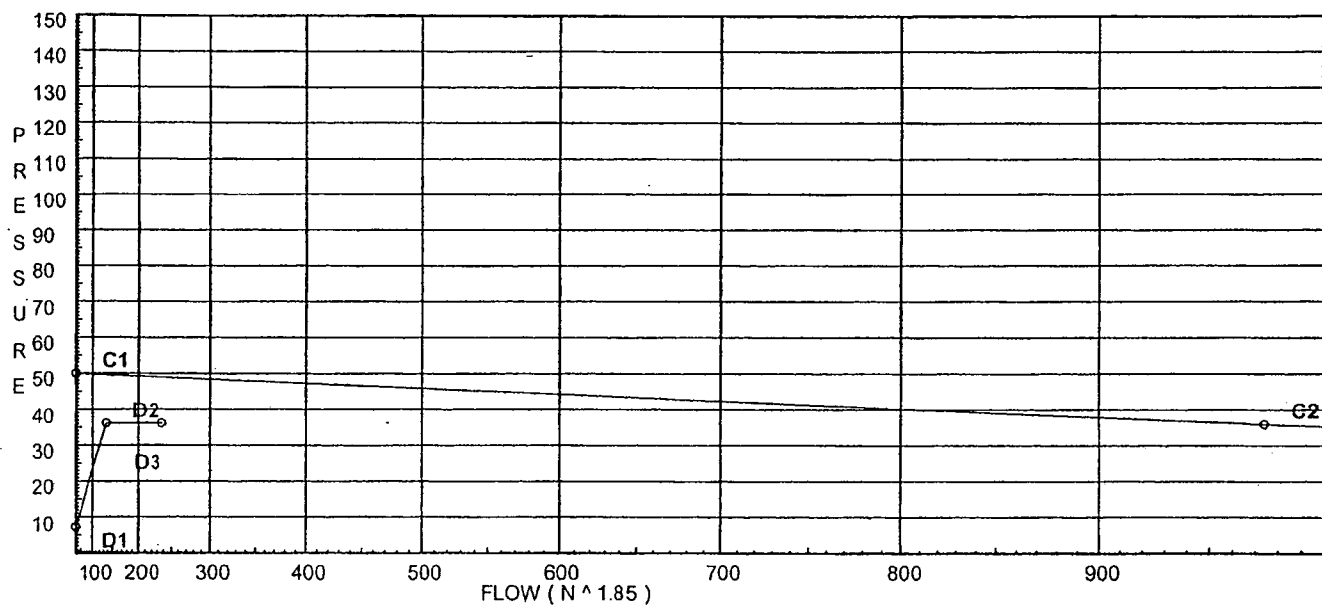
The maximum velocity is 11.27 and it occurs in the pipe between nodes 8 and 9

Water Supply Curve (C)

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City Water Supply:
C1 - Static Pressure : 50
C2 - Residual Pressure : 36
C2 - Residual Flow : 974

Demand:
D1 - Elevation : 7.215
D2 - System Flow : 136.942
D2 - System Pressure : 36.128
Hose (Adj City) :
Hose (Demand) : 100
D3 - System Demand : 236.942
Safety Margin : 12.848



Computer Programs by Hydratec Inc. Route 111 Windham N.H. USA 03087

001335

Fittings Used Summary

F.E.MORAN FIRE PROTECTION
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Fitting Legend		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24
Abbrev.	Name																				
B	Generic Butterfly Valve	0	0	0	0	0	0	7	10	0	12	9	10	12	19	21	0	0	0	0	0
E	90° Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	Generic Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
I	90° Grvd-Vic Elbow #10	0	0	2	3	4	3.5	6	5	8	7	8.5	10	13	17	20	23	25	33	36	40
J	90° Tee-Branch Grv Vic #20	0	0	4.5	6	8	8.5	10.8	13	17	16	21	25	33	41	50	65	78	88	98	120
T	90° Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
Zaf	Ames 3000SS	Fitting generates a Fixed Loss Based on Flow																			

Final Calculations - Hazen-Williams

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Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
D001 to EQ01	14.82 14.82	1.049 120 0.0747	1E 2.0 0.0 0.0	1.000 2.000 3.000	7.000 0.0 0.224		K Factor = 5.60 Vel = 5.50
	0.0 14.82				7.224		K Factor = 5.51
S06 to 8	15.50 15.5	1.049 120 0.0811	1E 2.0 1T 5.0 0.0	1.000 7.000 8.000	7.904 3.460 0.649		K Factor @ node EQ01 Vel = 5.75
	0.0 15.50				12.013		K Factor = 4.47
S07 to 9	18.32 18.32	1.049 120 0.1106	1E 2.0 1T 5.0 0.0	1.000 7.000 8.000	11.049 3.460 0.885		K Factor @ node EQ01 Vel = 6.80
	0.0 18.32				15.394		K Factor = 4.67
S08 to 10	19.90 19.9	1.049 120 0.1290	1E 2.0 1T 5.0 0.0	1.000 7.000 8.000	13.032 3.460 1.032		K Factor @ node EQ01 Vel = 7.39
	0.0 19.90				17.524		K Factor = 4.75
S02 to 1	15.44 15.44	1.049 120 0.0806	1E 2.0 1T 5.0 0.0	1.000 7.000 8.000	7.849 3.460 0.645		K Factor @ node EQ01 Vel = 5.73
	0.0 15.44				11.954		K Factor = 4.47
S03 to 2	18.26 18.26	1.049 120 0.1100	1E 2.0 1T 5.0 0.0	1.000 7.000 8.000	10.974 3.460 0.880		K Factor @ node EQ01 Vel = 6.78
	0.0 18.26				15.314		K Factor = 4.67
S04 to 3	19.83 19.83	1.049 120 0.1281	1E 2.0 1T 5.0 0.0	1.000 7.000 8.000	12.945 3.460 1.025		K Factor @ node EQ01 Vel = 7.36
	0.0 19.83				17.430		K Factor = 4.75
S05 to 8	14.87 14.87	1.049 120 0.0752	2E 4.0 0.0 0.0	13.000 4.000 17.000	7.275 3.460 1.278		K Factor @ node EQ01 Vel = 5.52
8 to 9	15.50 30.37	1.049 120 0.2818	0.0 0.0 0.0	12.000 0.0 12.000	12.013 0.0 3.381		Vel = 11.27

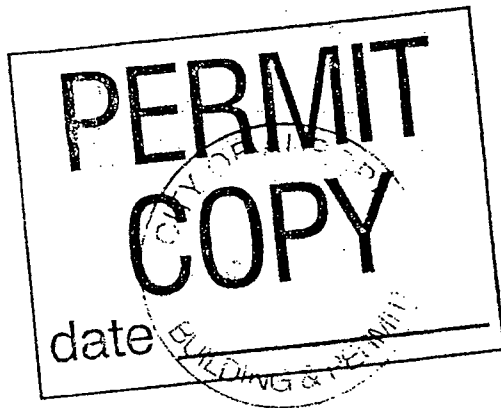
Final Calculations - Standard

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Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
9 to 10	18.32 48.69	1.38 120 0.1775	0.0 0.0 0.0	12.000 0.0 12.000	15.394 0.0 2.130			Vel = 10.44	
10 to 5	19.90 68.59	1.61 120 0.1580	1T 8.0 0.0 0.0	23.630 8.000 31.630	17.524 0.0 4.996			Vel = 10.81	
	0.0 68.59				22.520			K Factor = 14.45	
S01 to 1	14.82 14.82	1.049 120 0.0747	2E 4.0 0.0 0.0	13.000 4.000 17.000	7.224 3.460 1.270			K Factor @ node EQ01	
1 to 2	15.44 30.26	1.049 120 0.2800	0.0 0.0 0.0	12.000 0.0 12.000	11.954 0.0 3.360			Vel = 5.50	
2 to 3	18.26 48.52	1.38 120 0.1763	0.0 0.0 0.0	12.000 0.0 12.000	15.314 0.0 2.116			Vel = 11.23	
3 to 4	19.83 68.35	1.61 120 0.1569	1T 8.0 0.0 0.0	23.630 8.000 31.630	17.430 0.0 4.964			Vel = 10.41	
4 to 5	0.0 68.35	2.703 120 0.0126	0.0 0.0 0.0	10.000 0.0 10.000	22.394 0.0 0.126			Vel = 10.77	
5 to 6	68.59 136.94	2.703 120 0.0455	2I 18.651 0.0 0.0	46.000 18.651 64.651	22.520 0.0 2.943			Vel = 3.82	
6 to 7	0.0 136.94	3.314 120 0.0169	3I 21.838 1J 18.927 0.0	7.330 40.765 48.095	25.463 0.0 0.811			Vel = 7.66	
7 to BASE	0.0 136.94	4.31 120 0.0047	6I 58.535 2J 44.598 1Zaf 0.0	181.750 133.794 315.544	26.274 5.755 1.480			Vel = 5.09	
			1B 16.724 1E 13.937					* Fixed loss = 2	
BASE to TEST	100.00 236.94	4.1 140 0.0124	2E 29.067 1G 2.907 1T 29.067	150.000 61.041 211.041	33.509 0.0 2.619			Vel = 3.01	
	0.0 236.94				36.128			Qa = 100	
								Vel = 5.76	
								K Factor = 39.42	

07.-805. FRSP

240 N OAKHURST DR
GEMINI OFFICE
GEMINI OFFICE DEVELOPMENT



EQUIPMENT SUBMITTAL

FOR

GEMINI OFFICE DEVELOPMENT
OAKHURST DR.
AURORA, IL.

F.E. MORAN FIRE PROTECTION
2265 CARLSON DR.
NORTHBROOK, IL
60062-6797

CONTRACT # 3547

001339

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Firelock Fittings	13915-4 2.2 C. 9
Firelock Flange Adaptor	13915-4 2.2 C. 9
Victaulic Butterfly Valve	13915-8 2.7 D.2 a. 7
Victaulic Drain Elbow	13915-4 2.2 C. 9
Victaulic 716 Check Valve	13915-9 2.7 E. 1.1
Ames 3000SS Backflow Device	-
Allied Schedule 10 / 40 Pipe	13915-4 2.2 A / C
Siorz Connection	13915-13 2.12 B. 1
Potter Flow Switch	13915-14 2.13 C. 1. d
Tolco Adjustable Band Hangers	-
VK 462 White Concealed sprinklers	13915-11 2.10 B. 6
VK300 Upright Sprinklers	13915-11 2.10 B. 6

All other materials not identified herein shall comply with specifications section 13915

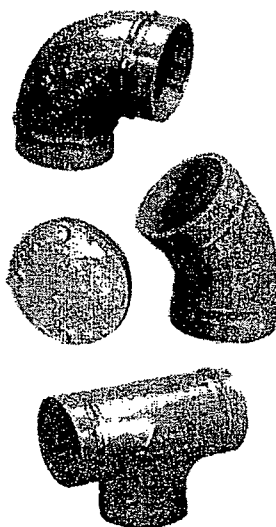
IPS CARBON STEEL PIPE – FIRE PROTECTION PRODUCTS

10.03

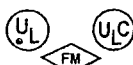
VICTAULIC® IS AN ISO 9001 CERTIFIED COMPANY

FireLock® Fittings

PRODUCT DESCRIPTION



Patented

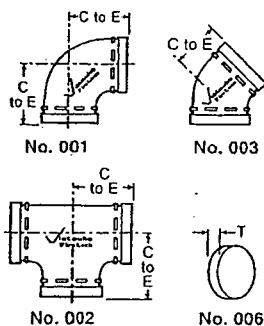
See Victaulic
publication 10.01
for details

FireLock® products comprise a unique system specifically designed for fire protection services. FireLock full-flow elbows and tees are a CAD-developed, hydrodynamic design that has a shorter center-to-end dimension than standard fittings. A noticeable bulge allows the water to make a smoother turn to maintain similar flow characteristics as standard full flow fittings.

FireLock fittings are designed for use exclusively with Style 005 and Style 009 FireLock Couplings. Use of other couplings or flange adapters may result in bolt pad interference.

Victaulic FireLock fittings pressure ratings conform to the ratings of Victaulic FireLock Style 005 couplings.

DIMENSIONS



Fitting Size		No. 001 90° Elbow		No. 003 45° Elbow		No. 002 Straight Tee		No. 006 Cap	
Nominal Diameter Inches/mm	Actual Outside Diameter Inches/mm	C to E Inches mm	Aprx. Weight Each Lbs./kg	C to E Inches mm	Aprx. Weight Each Lbs./kg	C to E Inches mm	Aprx. Weight Each Lbs./kg	Thickness "T" Inches mm	Aprx. Weight Each Lbs./kg
1 1/4 32	1.660 42.4	-	-	-	-	-	-	0.82 21	0.3 0.1
1 1/2 40	1.900 48.3	2.75 70	1.2 0.5	1.75 45	0.9 4.1	2.75 70	2.0 0.9	0.82 21	0.4 0.2
2 50	2.375 60.3	2.75 70	1.7 0.8	2.00 51	1.8 0.8	2.75 70	2.4 1.1	0.88 22	0.6 0.3
2 1/2 65	2.875 73.0	3.00 76	3.1 1.4	2.25 57	2.2 1.0	3.00 76	3.5 1.6	0.88 22	1.0 0.5
76.1 mm	3.000 76.1	3.00 76	3.30 1.5	2.25 57	2.4 1.1	-	-	-	-
3 80	3.500 88.9	3.38 86	4.0 1.8	2.50 64	3.1 1.4	3.38 86	5.3 2.4	0.88 22	1.2 0.5
108 mm	4.250 108.0	4.00 102	5.7 2.6	3.00 76	5.1 2.3	4.00 102	7.5 3.4	-	-
4 120	4.500 114.3	4.00 102	6.7 3.0	3.00 76	5.6 2.5	4.00 102	8.7 3.9	1.00 25	2.4 1.1
5 125	5.563 141.3	4.88 124	12.6 5.7	3.25 83	8.3 3.8	4.88 124	15.7 7.1	1.00 25	4.1 1.9
159 mm	6.250 158.8	5.50 140	12.6 5.7	3.50 89	9.2 4.2	3.50 140	17.9 8.0	-	-
6 150	6.625 168.3	5.50 140	18.3 8.3	3.50 89	11.7 5.3	5.50 140	22.7 10.3	1.00 25	5.9 2.7
8 200	8.625 219.1	6.81 173	25.5 11.6	4.25 108	20.4 9.3	6.94 176	38.7 17.6	1.13 29	12.7 5.8

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1539 REV F

United States • Phone: 1-800-PICK-VIC (1-800-742-5842) • Fax: 610-250-8817 • e-mail: pickvic@victaulic.com
 Canada • Phone: 905-884-7444 • Fax: 905-884-9774 • e-mail: viccanada@victaulic.com
 Europe • Phone: 32-9-381-1500 • Fax: 32-9-380-4438 • e-mail: viceuro@victaulic.be
 UK • Phone: 44(0)1438741100 • Fax: 44(0)1438313883 • e-mail: viceuro@victaulic.be
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 Australasia • Phone: 66-21-54253300 • Fax: 66-21-54253671 • e-mail: vicap@victaulic.com

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10.03**FLOW DATA**

Fitting Size		Frictional Resistance Equivalent Feet/meters of Straight Pipe			
Nominal Diameter Inches/mm	Actual Outside Diameter Inches/mm	90° Elbow No. 001	45° Elbow No. 003	Straight Tee No. 002	
				Branch	Run
1 1/4 32	1.660 42.4	1.5 0.5	0.9 0.2	3.7 1.1	1.5 0.5
1 1/2 40	1.900 48.3	2.2 0.7	1.1 0.3	5.5 1.7	2.2 0.7
2 50	2.375 60.3	3.5 1.1	1.8 0.5	8.5 2.6	3.5 1.1
2 1/2 65	2.875 73.0	4.3 1.3	2.2 0.7	10.8 3.3	4.3 1.3
76.1 mm	3.000 76.1	4.5 1.4	2.3 0.7	11.0 3.4	4.5 1.4
3 80	3.500 88.9	5.0 1.5	2.6 0.8	13.0 4.0	5.0 1.5
108 mm	4.250 108.0	6.4 2.0	3.2 0.9	15.3 4.7	6.4 2.0
4 100	4.500 114.3	6.8 2.1	3.4 1.0	16.0 4.9	6.8 2.1
5 125	5.563 141.3	8.5 2.6	4.2 1.3	21.0 6.4	8.5 2.6
159 mm	6.250 158.8	9.4 2.9	4.9 1.5	25.0 7.6	9.6 2.9
6 150	6.625 168.3	10.0 3.0	5.0 1.5	25.0 7.6	10.0 3.0
8 200	8.625 219.1	13.0 4.0	5.0 1.5	33.0 10.1	13.0 4.0

† The flow data listed is based upon the pressure drop of Schedule 40 pipe.

MATERIAL SPECIFICATIONS**Fitting:** Ductile iron conforming to ASTM A-536, grade 65-45-12**Fitting Coating:** Orange enamel• **Optional:** Hot dipped galvanized

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

IPS CARBON STEEL PIPE – FIRE PROTECTION PRODUCTS

10.04

VICTAULIC® IS AN ISO 9001 CERTIFIED COMPANY

Style 744 FireLock® Flange Adapter

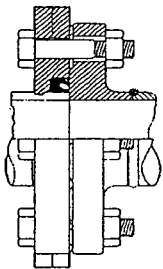
with Vic-Plus™ Gasket System



PRODUCT DESCRIPTION



2 - 8" Sizes



(Exaggerated for clarity)

Style 744 FireLock Flange adapter is designed for directly incorporating flanged components with ANSI CL 125 or CL 150 bolt hole patterns into a grooved pipe system. Sizes 2 - 8" (50 - 200 mm) are hinged for easy handling with integral end tabs which facilitate assembly.

The design incorporates small teeth inside the key shoulder I.D. to prevent rotation.

Because of the outside flange dimension, FireLock Flange adapters should not be used on FireLock fittings. When wafer or lug-type valves are used adjoining a Victaulic fitting, check disc dimensions to assure proper clearance.

FireLock Flange adapters should not be used as anchor points for tie-rods across nonrestrained joints. Mating rubber faced flanges, valves, etc., require the use of a FireLock Flange washer.

FireLock Flange adapters with Vic-Plus gaskets do not require lubrication. The gasket must always be assembled with the color coded lip on the pipe and the other lip facing the mating flange.

Style 744 FireLock Flange Adapters with the Vic-Plus™ Gasket System are designed and recommended for use ONLY on fire protection systems.

Vic-Plus Gasket System:

Victaulic® now offers a gasket system which requires no field lubrication on wet pipe systems. The Vic-Plus™ System (patented) is dry, clean, and non-toxic. It reduces assembly time substantially and eliminates the mess and chance of over-lubrication. Please refer to the latest copy of the Victaulic Field Installation Handbook (I-100) for supplemental lubrication requirements.

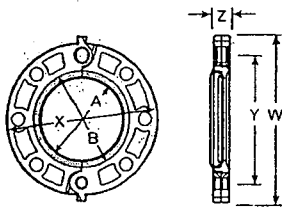


See Victaulic publication 10.01 for details.

DIMENSIONS

Style 744

Sizes 2 - 8" (50 - 200 mm)
ANSI Class 125 and 150 Flange



Note: Gray area of mating face must be free from gouges, undulations or deformities of any type for effective sealing.

Pipe Size		Max. Work Press.* PSI kPa	Max. End Load* Lbs. N	No. Bolts † Req'd.	Bolt Size † Inches	Sealing Surface Inches/mm		Dimensions Inches/millimeters				Aprx. Wgt. Each Lbs. kg
Nominal Diameter In./mm	Actual Outside Diameter In./mm					"A" Max.	"B" Min.	W	X	Y	Z	
2 50	2.375 60.3	175 1200	175 3450	4	1/2 X 2 1/4	2.38 60	3.41 87	6.75 172	6.00 152	4.75 121	0.75 19	2.7 1.2
2 1/2 65	2.875 73.0	175 1200	1135 5050	4	5/8 X 3	2.88 73	3.91 99	7.88 200	7.00 178	5.50 140	0.88 22	4.2 1.9
3 80	3.500 88.9	175 1200	1085 7500	4	5/8 X 3	3.50 89	4.53 115	8.44 214	7.50 191	6.00 152	0.94 24	4.8 2.2
4 100	4.500 114.3	175 1200	2780 11045	8	5/8 X 3	4.50 114	5.53 141	9.94 252	9.00 229	7.50 191	0.94 24	7.1 3.2
5 125	5.563 141.3	175 1200	4250 18920	8	3/4 X 3 1/2	5.56 141	6.71 171	11.00 279	10.00 254	8.50 216	1.00 25	8.3 3.8
6# 150	6.625 168.3	175 1200	6030 26840	8	3/4 X 3 1/2	6.63 168	7.78 198	12.00 305	11.00 279	9.50 241	1.00 25	9.3 4.2
8# 200	8.625 219.1	175 1200	10219 45475	8	3/4 X 3 1/2	8.63 219	9.94 252	14.63 372	13.50 343	11.75 298	1.13 29	13.9 6.3

*Refer to notes below.

† Total bolts required to be supplied by installer. Bolt sizes for conventional flange-to-flange connection. Larger bolts are required when Vic-Flange adapter is utilized with wafer-type valves.

Not available with Vic-Plus gasket system. Lubrication is required.

NOTES

* Working Pressure and End Load are total, from all internal and external loads, based on standard weight steel pipe, standard roll or cut grooved in accordance with Victaulic specifications. Contact Victaulic for performance on other pipe.

WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1 1/2 times the figures shown.

Style 744 FireLock Flange adapters provide rigid joints when used on pipe with standard roll or cut groove dimensions and consequently allow no linear or angular movement at the joint.

WARNING: Depressurize and drain the piping system before attempting to install, remove, or adjust any Victaulic piping products.

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 Victaulic Company of Canada • Phone: 905-884-7444 • Fax: 905-884-9774 • e-mail: viccanada@victaulic.com
 Victaulic Europe • Phone: 32-9-331-1500 • Fax: 32-9-380-4438 • e-mail: viceuro@victaulic.be
 Victaulic America Latina • Phone: 610-559-3300 • Fax: 610-559-3608 • e-mail: vical@victaulic.com
 Victaulic Asia Pacific • Phone: 65-6235-3035 • Fax: 65-6235-0535 • e-mail: vicap@victaulic.com



001343

10.04**VIC-FLANGE ADAPTER NOTES**

- 1 The Style 744 (2 - 8750 - 200 mm) design incorporates small teeth inside the key shoulder I.D. to prevent rotation.
- 2 FireLock Flange adapter should not be used on FireLock fittings. When wafer or lug-type valves are used adjoining a Victaulic fitting, check disc dimensions to assure proper clearance.
- 3 FireLock Flange adapters should not be used as anchor points for tie-rods across nonrestrained joints. Mating rubber faced flanges, valves, etc. require the use of a FireLock Flange washer.
- 4 Area A-B noted in the above drawing must be free from gouges, undulations or deformities of any type for effective sealing.
- 5 FireLock Flange adapter gaskets must always be assembled with the color coded lip on the pipe and the other lip facing the mating flange.
- 6 Flange Washers: FireLock Flange adapters require a smooth hard surface at the mating flange face for effective sealing. Some applications for which the Vic-Flange adapter is otherwise well suited do not provide an adequate mating surface. In such cases, it is recommended that a metal Flange Washer be inserted between the FireLock Flange adapter and the mating flange to provide the necessary sealing surface.

Typical applications where a Flange Washer should be used are:

- A When mating to a serrated flange: a standard flat flange gasket should be used adjacent to the serrated flange and then the Flange Washer is inserted between the FireLock Flange adapter and the flange gasket.
- B When mating to a wafer valve: where typical valves are rubber lined and partially rubber faced (smooth or not), the Flange Washer is placed between the valve and the FireLock Flange adapter.
- C When mating a rubber faced flange: the Flange Washer is placed between the FireLock Flange adapters and the rubber faced flange.
- D When mating AWWA cast flanges to IPS flanges: the Flange Washer is placed between two FireLock Flanges. The hinge points must be oriented approximately 90° to each other. If one flange is not a FireLock Flange adapter (e.g. flanged valve), then a standard flat flange gasket must be placed adjacent to that flange and the Flange Washer inserted between the flange gasket and the FireLock Flange adapter.
- E When mating to components (valves, strainers, etc.) where the component flange face has an insert: follow the same arrangement as in Application 1.
- F When mating to a Series 705-W Butterfly valve, Style 744 may only be used on one side of the connection.

When ordering Flange Washers, always specify product style (Style 744) and size to assure proper Flange Washer is supplied.

MATERIAL SPECIFICATIONS

Flange Housing: Ductile iron conforming to ASTM A-536, grade 65-45-12. Ductile iron conforming to ASTM A-395, grade 65-45-15, is available upon special request.

Coating: Black enamel

- **Optional:** Hot dipped galvanized

Bolts/Nuts: Supplied by installer

Gasket:

- **Grade "E" EPDM - Type A Vic-Plus Gasket System Δ**
(Violet color code). FireLock products have been Listed by Underwriters Laboratories Inc. and Approved by Factory Mutual Research for wet and dry (oil free air) sprinkler services up to the rated working pressure using the Grade "E" Type A Vic-Plus Gasket System, requiring no field lubrication for most installation conditions.

A Standard gasket approved for dry pipe systems to -40°F (-40°C). Based on "typical" pipe surface conditions, supplemental lubricant is recommended for services installed below 0°F (-18°C) and for all dry pipe systems or systems to be subjected to air tests prior to being filled with water. Supplemental lubrication may also be required on pipe with raised or undercut weld seams or pipe that has voids and/or cracks at the weld seams

This product shall be manufactured by Victaulic Company. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

IPS CARBON STEEL PIPE - FIRE PROTECTION VALVES

10.18

FireLock® Butterfly Valve

SERIES 705W

WITH WEATHERPROOF ACTUATOR FOR 300 PSI SERVICE

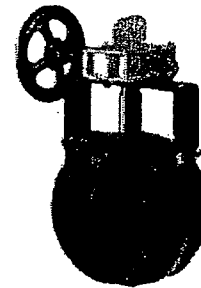
The Series 705W butterfly valve features an approved weatherproof actuator housing approved for indoor or outdoor use. It has a ductile iron body and disc with EPDM disc coating. The body is coated with a heat fused polyphenylene sulfide blend to meet FM requirements. Designed for fire protection services only, Series 705W valve is UL Listed and FM Approved for 300 psi/2065 kPa service. Contact Victaulic for details of agency approvals.

WEATHERPROOF ACTUATOR

Supervisory switches that monitor the valve in the fully open or fully closed position for valves are available 2 1/2 - 12" / 65 - 300 mm pre-wired (PW).

OPTIONAL SUPPLY-SIDE TAP

Series 705W valves are available with a 1/2" (for 2 1/2", 76.1 mm and 3" sizes) or 1/4" (4 - 12" / 100 - 300 mm sizes) NPT supply side tap designed to allow direct water supply connection to Victaulic FireLock actuated fire protection valves. See separate drawings below. This is an optional feature and must be clearly noted on all orders. 1/4" tap available by special order. Contact Victaulic for additional information on tapped valves.



MATERIAL SPECIFICATIONS

Body: Ductile iron conforming to ASTM A-536, coated with polyphenylene sulfide blend.

Disc: Ductile iron conforming to ASTM A-536, various grades, EPDM coated.

Disc Coating:

- Grade "E" EPDM

EPDM (Green color code). Temperature range -30°F to +230°F/-34°C to +110°C. Recommended for cold and hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C and hot +180°F/+82°C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.

Stem Bearings: Teflon impregnated fiberglass with stainless steel backing.

Stem Bearing Nuts: Type 416 Stainless Steel.

Tap Plug: Carbon steel, plated.

O-Ring: EPDM

Bracket: Carbon steel, painted.

Actuator:

- 2 1/2 - 8" / 65 - 200 mm: Bronze traveling nut on a steel lead screw, in a ductile iron housing.
- 10 - 12" / 250 - 300 mm: Steel worm and cast iron quadrant gear, in a cast iron housing.

JOB/OWNER

System No. _____

Location _____

CONTRACTOR

Submitted By _____

Date _____

ENGINEER

Spec Sect _____ Para _____

Approved _____

Date _____

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10.18

IPS CARBON STEEL PIPE - FIRE PROTECTION VALVES

FireLock® Butterfly Valve

SERIES 705W

WITH WEATHERPROOF ACTUATOR FOR 300 PSI SERVICE

MATERIAL SPECIFICATIONS

Handwheel:

Size Inches mm	Version	
	UL Listed LPCB, FM Black Inches mm	VdS Red mm
2 1/4 - 4 65 - 100	3.0 76.2	125
5 - 6 125 - 150	4.5 114.3	200
8 200	160 mm	250
10 - 12 250 - 300	9 225	

*VdS version not UL Listed, FM Approved or LPCB Approved.

10.18

FireLock® Butterfly Valve

SERIES 705W
WITH WEATHERPROOF ACTUATOR FOR 300 PSI SERVICE

DIMENSIONS -   

Size		Dimensions - inches/millimeters								Aprx. Wgt. Each
Nominal Size inches/mm	Actual Outside Diameter inches/mm	End to End inches/mm	H ₁ inches/mm	H ₂ inches/mm	F ₁ inches/mm	F ₂ inches/mm	O ₁ inches/mm	W ₁ inches/mm	W ₂ inches/mm	lbs/kg
2 1/2	2.375	3.77	8.76	—	4.21	6.08	3.00	0.00 *	0.75	8.3
65	73.0	95.0	222.5	—	106.9	154.4	76.2	0.0 *	19.1	3.8
76.1 mm	3.000	3.77	8.76	—	4.21	6.08	3.00	0.00 *	0.75	8.3
3	76.1	95.0	222.5	—	106.9	154.4	76.2	0.0 *	19.1	3.8
80	3.500	4.77	9.40	0.05	4.21	6.08	3.00	0.00 *	0.75	8.9
4	88.9	95.0	236.6	2.0	106.9	154.4	76.2	0.0 *	19.1	4.0
100	4.500	4.83	10.84	0.07	6.01	6.98	3.00	0.73	1.13	14.9
125	114.3	117.6	275.3	1.8	152.7	177.3	76.2	18.5	28.7	6.8
138.7 mm	5.500	5.88	12.38	0.43	6.01	8.57	4.50	—	—	21.0
5	139.7	149.4	314.5	10.9	152.7	217.7	114.3	—	—	9.5
125	5.563	5.88	12.38	0.43	6.01	8.57	4.50	—	—	21.0
165.1 mm	141.3	149.4	314.5	10.9	152.7	217.7	114.3	—	—	9.5
165.1 mm	6.500	5.88	13.41	1.00	7.51	9.32	4.50	1.60	1.88	26.5
10	165.1	149.4	340.6	25.4	190.3	236.7	114.3	40.6	47.3	12.0
11	6.625	7.88	13.41	1.93	7.51	9.32	4.50	1.60	1.88	26.5
150	168.3	149.4	340.6	25.4	190.3	236.7	114.3	40.6	47.3	12.0
8	8.625	5.33	16.50	1.27	9.65	10.98	6.33	0.00 *	0.68	43.0
200	219.1	135.4	419.1	32.3	245.1	278.9	160.0	0.0 *	17.3	19.5
10	10.750	6.40	9.14	1.72	12.26	16.19	9.00	—	—	80.0
250	273.0	162.6	486.7	43.7	309.9	411.2	228.6	—	—	36.3
12	12.750	6.50	21.54	2.66	14.25	17.22	9.00	—	—	102.0
300	325.9	165.1	547.1	67.6	362.0	437.4	228.6	—	—	46.3

* On Centerline

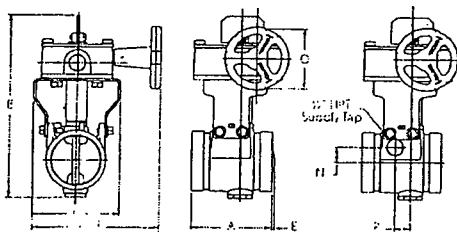
† These dimensions apply only to a Series 705W Butterfly Valve with a 1/2-inch NPT, supply-side tap

1. To prevent rotation of valves, it is recommended that Series 705W be installed with Victaulic Style 07 Zero-Flex®, Style 005 FireLock®, style 009/009V FireLock EZ, or Style HP-70 Rigid Couplings. If Victaulic flexible couplings are used, additional support may be required.

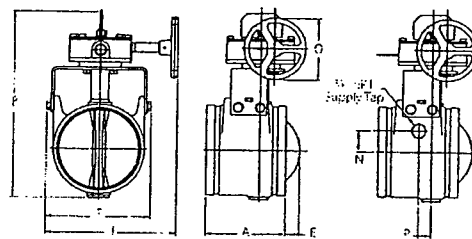
2. Valve must not be installed with disc in full open position. Disc must be partly closed so that no part is protruding beyond end of valve body.

3. Victaulic grooved end butterfly valves are permitted for use with grooved end pipe (IPS) only. Not permitted for use with plain end (IP) pipe.

4. Series 705W valves are designed for ambient weather conditions as opposed to submersible service.



2 1/2 - 4-INCH/65 - 100-MM SIZES



5 - 12-INCH/125 - 300-MM SIZES

IPS CARBON STEEL PIPE FIRE PROTECTION VALVE

FireLock® Butterfly Valve

SERIES 705W
WITH WEATHERPROOF ACTUATOR FOR 300 PSI SERVICE

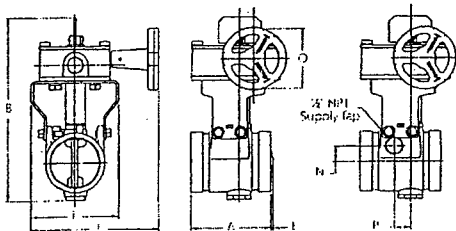
DIMENSIONS - VdS

Size		Dimensions - in (mm)								Approx. Wgt. Each
Nominal Size inches mm	Actual Outside Diameter inches mm	End to End "A"	Hgt. "B"	"C"	"F"	"H"	"Q"	"N" †	"P" †	
2½	2.875	3.77	8.76	---	4.21	6.08	4.92	0.00 *	0.75	8.3
65	73.0	95.6	222.5	---	106.9	154.4	125	0.0 *	19.1	3.6
76.1 mm	3.000	3.77	8.76	---	4.21	6.08	4.92	0.00 *	0.75	8.3
3	3.500	3.77	9.40	0.03	4.21	6.08	4.92	0.00 *	0.75	8.9
80	38.2	95.6	238.8	2.0	106.9	154.4	125	0.0 *	19.1	4.0
4	4.500	4.63	10.84	0.07	6.01	6.98	4.92	0.73	1.13	14.9
100	114.3	117.6	275.3	1.8	152.7	177.3	125	18.5	28.7	6.8
139.7 mm	5.500	5.88	12.38	0.43	6.01	8.57	7.87	---	---	21.0
5	5.563	5.88	12.38	0.43	6.01	8.57	7.87	---	---	21.0
125	141.3	149.4	314.5	10.9	152.7	217.7	200	---	---	9.5
165.1 mm	6.500	5.88	13.41	1.00	7.51	9.32	7.87	1.60	1.88	26.5
6	6.625	5.88	13.41	1.00	7.51	9.32	7.87	1.60	1.88	26.5
150	168.3	149.4	340.6	25.4	190.8	236.7	200	40.6	47.8	12.0
8	8.625	5.33	16.50	1.27	9.65	10.98	9.84	0.00 *	0.68	43.0
200	219.1	135.4	419.1	32.3	245.1	278.9	250	0.0 *	17.3	19.5
10	10.750	6.40	19.14	1.72	12.20	16.19	9.84	---	---	80.0
250	273.0	162.6	486.2	43.7	309.9	411.2	250	---	---	36.3
12	12.750	6.50	21.54	2.66	14.25	17.22	9.84	---	---	102.0
300	323.9	165.1	547.1	67.6	362.0	437.4	250	---	---	46.3

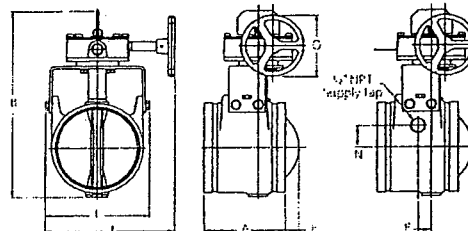
* On Centerline

† These dimensions apply only to a Series 705W Butterfly Valve with a ½-inch NPT, supply-side tap

1. To prevent rotation of valves, it is recommended that Series 705W be installed with Victaulic Style 07 Zero-Flex®, Style 005 FireLock, Style 009/009V FireLock EZ, or Style HP-70 Rigid Couplings. If Victaulic flexible couplings are used, additional support may be required.
2. Valve must not be installed with disc in full open position. Disc must be partly closed so that no part is protruding beyond end of valve body.
3. Victaulic grooved end butterfly valves are permitted for use with grooved end pipe (IPS) only. Not permitted for use with plain end (IPS) pipe.
4. Series 705W valves are designed for ambient weather conditions as opposed to submersible service.



2½ - 4-INCH/65 - 100-MM SIZES



5 - 12-INCH/125 - 300-MM SIZES

10.18

FireLock® Butterfly Valve

SERIES 705W
WITH WEATHERPROOF ACTUATOR FOR 300 PSI SERVICE

PERFORMANCE

The chart expresses the frictional resistance of Victaulic Series 705W in equivalent feet/meters of straight pipe.

Size			Size		
Nominal Size Inches mm	Actual Outside Diameter Inches mm	Equiv. Feet/m of Pipe	Nominal Size Inches mm	Actual Outside Diameter Inches mm	Equiv. Feet/m of Pipe
2½	2.875	5	165.1 mm	6.500	8
65	73.0	1.6		165.1	2.5
	3.000	5	6	6.625	8
76.1 mm	76.1	1.6	150	168.3	2.5
3	3.500	5	8	8.625	11
80	88.9	1.6	200	219.1	3.4
4	4.500	12	10	10.750	12
100	114.3	3.7	250	273.0	3.7
	5.500	12	12	12.750	14
139.7 mm	139.7	3.7	300	323.9	4.3
5	5.563	12			
125	141.3	3.7			

IPS CARBON STEEL PIPE -- FIRE PROTECTION VALVES

10.18

FireLock® Butterfly Valve**SERIES 705W
WITH WEATHERPROOF ACTUATOR FOR 300 PSI SERVICE****PERFORMANCE**

C_v values for flow of water at +60°F/+16°C with a fully open valve are shown in the table below. For additional details, contact Victaulic.

Formulas for C_v Values:

$$\Delta P = \frac{Q^2}{C_v^2}$$

$$Q = C_v \times \sqrt{\Delta P}$$

Where:

Q = Flow (GPM)

ΔP = Pressure Drop (psi)

C_v = Flow Coefficient

Size			Size			Size		
Nominal Size Inches mm	Actual Outside Diameter Inches mm	C_v (Full Open)	Nominal Size Inches mm	Actual Outside Diameter Inches mm	C_v (Full Open)	Nominal Size Inches mm	Actual Outside Diameter Inches mm	C_v (Full Open)
2½ 65	2.875 73.0	325	139.7 mm	5.500 139.7	1150	8 200	8.625 219.1	3400
76.1 mm	3.000 76.1	325	5 125	5.563 141.3	1150	10 250	10.750 273.0	5750
3 80	3.500 88.9	482	165.1 mm	6.500 165.1	1850	12 300	12.750 323.9	8300
4 100	4.500 114.3	600	6 150	6.625 168.3	1850			

Formulas for K_v Values:

$$\Delta P = \frac{Q^2}{K_v^2}$$

$$Q = K_v \times \sqrt{\Delta P}$$

Where:

Q = Flow ($\frac{m^3}{hr}$)

ΔP = Pressure (bar)

K_v = Flow Factor

Size			Size			Size		
Nominal Size Inches mm	Actual Outside Diameter Inches mm	K_v (Full Open)	Nominal Size Inches mm	Actual Outside Diameter Inches mm	K_v (Full Open)	Nominal Size Inches mm	Actual Outside Diameter Inches mm	K_v (Full Open)
2½ 65	2.875 73.0	280	139.7 mm	5.500 139.7	995	8 200	8.625 219.1	2940
76.1 mm	3.000 76.1	280	5 125	5.563 141.3	995	10 250	10.750 273.0	4975
3 80	3.500 88.9	415	165.1 mm	6.500 165.1	1600	12 300	12.750 323.9	7180
4 100	4.500 114.3	520	6 150	6.625 168.3	1600			

WITH WEATHERPROOF ACTUATOR FOR 300 PSI SERVICE

The connection of the alarm switch wiring shall be in accordance with NFPA 72 and the auxiliary switch per NFPA 70 (NEC).

IPS CARBON STEEL PIPE - FIRE PROTECTION VALVES

10.18

Fire Protection Butterfly Valve

SERIES 705W
WITH WEATHERPROOF ACTUATOR FOR 300 PSI SERVICE

WARRANTY

Refer to the Warranty section of the current Price List or contact Victaulic for details.

NOTE

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

INSTALLATION

Reference should always be made to the installation sheet included with the valve. Verify you have the latest revision by visiting our website at www.victaulic.com. Further reference can be found in the I-100 Victaulic Field Installation Handbook.



For complete contact information, visit www.victaulic.com

10.18 2466 REV F UPDATED 12/2006

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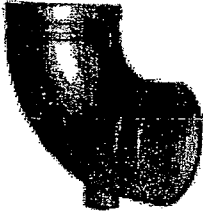
IPS CARBON STEEL PIPE – FIRE PROTECTION FITTINGS

10.05

VICTAULIC® IS AN ISO 9001 CERTIFIED COMPANY

No. 10-DR Drain Elbow

PRODUCT DESCRIPTION



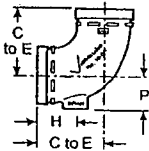
See Victaulic
publication 10.01
for details.

No. 10-DR drain elbows are specifically designed for use on fire protection standpipes. The drain is drilled and tapped for a 1" (25 mm) NPT outlet.

Constructed of durable ductile iron all sizes conform to the ratings of Style 77 couplings. No. 10-DR elbows are supplied with grooves or shoulders. These fittings are not intended for use with Victaulic Plain End couplings.

When connecting wafer or lug-type butterfly valves directly to Victaulic drain elbows with Style 741 or 743 Vic-Flange® adapters or Style 744 FireLock® Flange adapters, check disc clearance dimensions with the I.D. dimension of the fitting.

DIMENSIONS



Fitting Size		Dimensions Inches/millimeters			Approximate Weight Each Lbs./kg
Nominal Outside Diameter Inches/mm	Actual Outside Diameter Inches/mm	C - E	H	P	
2 1/2 65	2.875 73.0	3.75 95	2.75 70	1.68 43	5.2 2.4
3 80	3.500 88.9	4.25 108	2.75 70	2.10 53	5.3 2.4
4 100	4.500 114.3	5.00 127	2.75 70	2.60 65	8.8 4.0
6 150	6.625 168.3	6.50 165	2.75 70	3.65 93	18.7 8.5

MATERIAL SPECIFICATIONS

Housing: Ductile iron conforming to ASTM A-536, grade 65-45-12. Ductile iron conforming to ASTM A-395, grade 65-45-15, is available upon special request.

Fitting Coatings: Orange enamel

- **Optional:** Hot dip galvanized and others.

This product shall be manufactured by Victaulic Company. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

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1509 REV D

Victaulic Company of America • Phone: 1-800-PICK-VIC (1-800-742-5842) • Fax: 610-250-8817 • e-mail: pickvic@victaulic.com
 Victaulic Company of Canada • Phone: 905-884-7444 • Fax: 905-884-9774 • e-mail: viccanada@victaulic.com
 Victaulic Europe • Phone: 32-9 381-1500 • Fax: 32-9-380-4438 • e-mail: viceuro@victaulic.be
 Victaulic America Latina • Phone: 610-559-3300 • Fax: 610-559-3606 • e-mail: vical@victaulic.com
 Victaulic Asia Pacific • Phone: 65-6235-3035 • Fax: 65-6235-0535 • e-mail: vicap@victaulic.com

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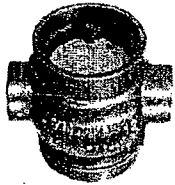
IPS CARBON STEEL PIPE – GROOVED VALVES

08.08

VICTAULIC® IS AN ISO 9001 CERTIFIED COMPANY

Series 716 Vic-Check® Valves

PRODUCT DESCRIPTION



Sizes 2 1/2 & 3"



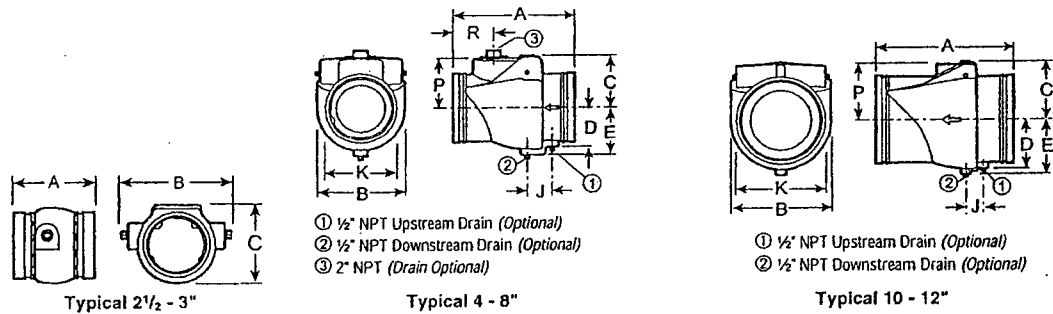
Sizes 4 - 12"

The Series 716 check valve is a product of computer-assisted innovative engineering with quality features including a new hydrodynamically efficient profile. Available in sizes 2 1/2 - 12"/65 - 300 mm, the Vic-Check® valve utilizes a spring-assisted, single-disc design that achieves a leak-free seal with as little as 5 ft./1.5 m of head. The valve can be installed in both horizontal and vertical positions.

Series 716 check valves are engineered for long life and seize-free sealing. In sizes 2 1/2 and 3"/65 and 80 mm, the elastomeric seal, mounted on the aluminum bronze disc, seats against the machined area of the body, which is completely coated with polyphenylene sulphide (PPS). Sizes 4 - 12"/100 - 300 mm feature an elastomer-encapsulated disc and a welded-in nickel seat. Every valve is factory tested to its working pressure of 300 psi/2065 kPa. Drains are provided both upstream and downstream of the disc.

Grooved ends allow fast, easy installation with just two Victaulic couplings. The valve may also be connected to flanged (ANSI Class 150) components using Style 741 Vic-Flange adapters on either end.

DIMENSIONS



Nom. Size In./mm	Actual Outside Dia. In./mm	Dimensions - Inches/millimeters									Approx. Wgt. Ea. Lbs./kg
		E - E A	Overall Width B	C	D	E	J	K	P	R	
2 1/2 65	2.875 73.0	3.88 99	4.25 108	3.60 91	-	-	-	-	-	-	3.6 1.6
3 76.1 mm	3.000 76.1	3.88 99	4.25 108	3.60 91	-	-	-	-	-	-	3.6 1.6
4 100	3.500 88.9	4.75 108	5.06 129	4.19 106	-	-	-	-	-	-	4.5 2.0
5 125	4.500 114.3	9.63 245	6.00 152	3.90 99	2.75 70	3.50 89	2.00 51	4.50 114	3.50 89	3.35 85	16.0 7.3
6 150	5.563 141.3	10.50 267	6.80 173	4.50 114	4.17 106	4.17 106	2.15 55	5.88 149	4.08 104	4.02 102	20.0 9.1
8 200	5.500 139.7	10.50 267	6.80 173	4.50 114	4.17 106	4.17 106	2.15 55	5.88 149	4.08 104	4.02 102	27.0 12.3
10 250	6.625 168.3	11.50 292	8.00 203	5.00 127	4.50 114	4.50 114	2.38 61	6.67 169	4.73 120	3.89 99	28.0 12.7
12 300	6.500 165.1	11.50 292	8.00 203	5.00 127	4.50 114	4.50 114	2.38 61	6.67 169	4.73 120	3.89 99	28.0 12.7
14 350	8.625 219.1	14.00 356	9.88 251	6.70 155	5.05 128	5.65 144	2.15 55	8.75 222	5.70 145	5.75 146	40.0 18.1
16 400	10.750 273.0	17.00 432	12.00 305	7.10 180	5.96 151	6.69 170	2.15 55	10.92 277	6.93 176	-	100.0 45.4
18 450	12.750 323.9	19.50 495	14.00 356	8.10 206	6.91 176	7.64 194	2.51 64	12.81 325	7.93 201	-	140.0 63.5

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1403 REV D

United States - Phone: 1-800-PICK-VIC (1-800-742-5842) - Fax: 610-250-8817 - e-mail: pickvic@victaulic.com
 Canada - Phone: 905-884-7444 - Fax: 905-884-9774 - e-mail: viccanada@victaulic.com
 Europe - Phone: 32-9-381-1500 - Fax: 32-9-380-4438 - e-mail: viceuro@victaulic.be
 UK - Phone: 44(0)1438741100 - Fax: 44(0)1438313883 - e-mail: viceuro@victaulic.be
 Central and South America - Phone: 610-559-3300 - Fax: 610-559-3608 - e-mail: vical@victaulic.com
 Australasia - Phone: 86-21-54253300 - Fax: 86-21-54253671 - e-mail: vicap@victaulic.com



001354

08-08

PERFORMANCE

Vic-Check valves combine high pressure capabilities with low pressure drop performance. The grooved end design permits fast, easy installation.

The seat provides leak-free sealing under conditions as low as five feet of head.

Cv values for flow of water at +60°F/+16°C with a fully open valve are shown in the table at right.

Formulas for Cv Values:

$$\Delta P = \frac{Q^2}{C_v^2}$$

$$Q = C_v \times \sqrt{\Delta P}$$

Where:

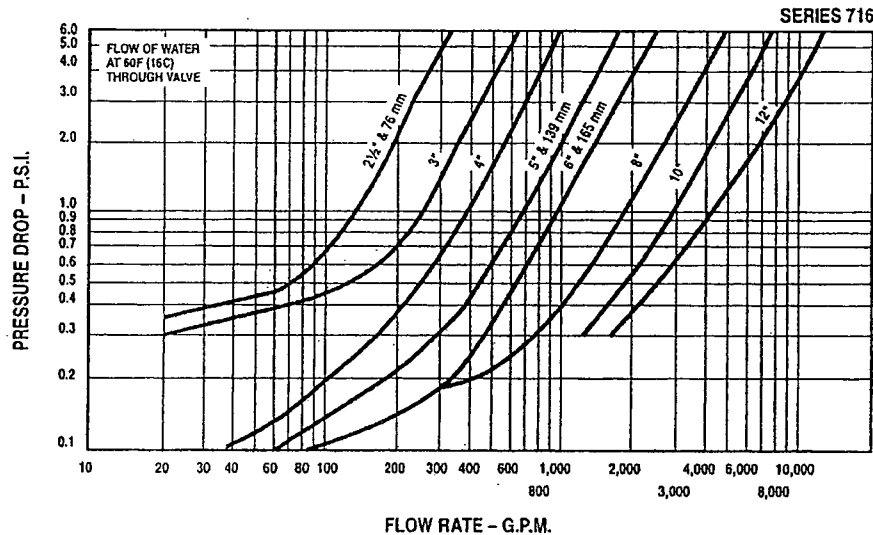
Q = Flow (GPM)

Cv = Flow Coefficient

ΔP = Pressure Drop (psi)

Nom. Size In./mm	Actual Outside Dia. In./mm	Cv (Full Open)	Nom. Size In./mm	Actual Outside Dia. In./mm	Cv (Full Open)	Nom. Size In./mm	Actual Outside Dia. In./mm	Cv (Full Open)
2 1/2 65	2.875 73.0	140	139.7 mm	5.500 139.7	700	8 S 200	8.625 219.1	1800
76.1 mm	3.000 76.1	140	5 125	5.563 141.3	700	10 S 250	10.750 273.0	3000
3 80	3.500 88.9	250	165.1 mm	6.500 165.1	1000	12 S 300	12.750 323.9	4200
4 100	4.500 114.3	390	6 150	6.625 168.3	1000			

NOTE: Placement of check valves too close to sources of unstable flow will shorten the life of the valve and potentially may damage the system. To extend valve life, valves should be installed a reasonable distance downstream from pumps, elbows, expanders, reducers or other similar devices. Sound piping practices dictate a minimum of five (5) times the pipe diameter for general use. Distances between three (3) and five (5) diameters are allowable provided the flow velocity is less than eight (8) feet per second (2.4 mps). Distances less than three (3) diameters are not recommended and will violate the Victaulic product warranty.



08/08

MATERIAL SPECIFICATIONS

Body: Ductile iron conforming to ASTM A-536, grade 65-45-12. Ductile iron conforming to ASTM A-395, grade 65-45-15, is available upon special request. 2 1/2 - 3"/65 - 80 mm sizes PPS coated, UL classified in accordance with ANSI/NSF 61 for potable water service. 4 - 12"/100 - 300 mm sizes painted black enamel.

Body Seat: Sizes 2 1/2 - 3"/65 - 80 mm machined surfaces PPS coated. 4 - 12"/100 - 300 mm integrally welded-on nickel alloy.

Disc Seal or Coating: (Specify Choice)

- **Grade "E" EPDM**

EPDM (Green color code). Temperature range -30°F to +230°F/-34°C to +110°C. Recommended for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C and hot +180°F/+82°C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.

- **Grade "T" nitrile**

Nitrile (Orange color code). Temperature range -20°F to +180°F/-29°C to +82°C. Recommended for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range; except hot, dry air over +140°F/+60°C and water over +150°F/+66°C. NOT RECOMMENDED FOR HOT WATER SERVICES.

- **Grade "O" fluoroelastomer**

Fluoroelastomer (Blue color code). Temperature range +20°F to +300°F/-7°C to +149°C. Recommended for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids and air with hydrocarbons to +300°F/+149°C.

*Services listed are General Service Recommendations only. It should be noted that there are services for which these disc liners are not recommended. Reference should always be made to the latest Victaulic Gasket Selection Guide for specific liner service recommendations and for a listing of services which are not recommended.

Discs: 2 1/2 - 3"/65 - 80 mm Aluminum bronze conforming to ASTM B-148. 4 - 12"/100 - 300 mm ductile iron conforming to ASTM A-536 Grade 65-45-12, fully encapsulated in Grade "E", "T", or "O" elastomer. (See Disk Seal)

Shaft: 2 1/2 - 3"/65 - 80 mm Type 416 stainless steel. 4 - 12"/100 - 300 mm Type 316 stainless steel.

Spring: All sizes Type 302/304 stainless steel.

Shaft Plug: 2 1/2 - 3"/65 - 80 mm only; SAE Hex Socket Type conforming to ASTM A-576, cadmium plated to military specifications QQ-P-416A, class 3 type 2.

Pipe Plug: 4 - 12"/100 - 300 mm only; carbon steel zinc plated to ASTM B-633.

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

ES-A-3000SS

Series 3000SS

Double Check Detector Assemblies

Sizes: 2 1/2" - 12" (65 - 300mm)



Features

- Patented Cam-Check Assembly valve provides low head loss
- Short lay length is ideally suited for retrofit installations
- Stainless Steel body is half the weight of competitive designs reducing installation and shipping cost
- Stainless steel construction provides long term corrosion protection and maximum strength
- Single top access cover with two-bolt grooved style coupling for ease of maintenance
- No special tools required for servicing
- Compact construction allows for smaller vaults and enclosures
- Furnished with 5/8" x 3/4" bronze meter (gpm or cfm)
- Detects underground leaks and unauthorized water use
- Maybe installed horizontal or vertical "flow up" position

Available Models

Suffix:

LG - less shutoff valves

OSY - UL/FM outside stem and yoke resilient seated gate valves

*OSY FxG - flanged inlet gate connection and grooved outlet gate connection

*OSY GxG - grooved inlet gate connection and flanged outlet gate connection

*OSY GxG - grooved inlet gate connection and grooved outlet gate connection

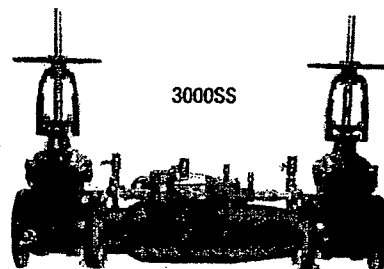
CFM - cubic feet per minute

GPM - gallons per minute meter

Available with grooved NRS gate valves - consult factory*

Post indicator plate and operating nut available - consult factory*

*Consult factory for dimensions



Series 3000SS Double Check Detector Assemblies are designed for use in accordance with water utility non-health hazard containment requirements. It is mandatory to prevent the reverse flow of fire protection system substances, i.e., glycerin wetting agents, stagnant water and water of non-potable quality from being pumped or siphoned into the potable water supply.

Specifications

A Double Check Detector Assembly shall be installed on fire protection systems when connected to a potable water supply. Degree of hazard present is determined by the local authority having jurisdiction. The main valve body shall be manufactured from 300 Series stainless steel to provide corrosion resistance, 100% lead free through the waterway. The double check detector assembly consists of two independently operating, spring loaded check valves, two UL, FM, OSY resilient seated gate valves, and bypass assembly. The bypass assembly consists of a meter (cubic ft. or gallons), a double check including shutoff valves and required test cocks. Each cam-check shall be internally loaded and provide a positive drip tight closure against reverse flow. Cam-check includes a stainless steel cam arm and spring, rubber faced disc and a replaceable seat. There shall be no brass or bronze parts used within the cam-check valve assembly. The check valve seats shall be of molded thermoplastic construction. The use of seat screws as a retention method is prohibited. All internal parts shall be accessible through a single cover on the valve assembly. The valve cover shall be held in place through the use of a single grooved style two-bolt coupling. The bypass line shall be hydraulically sized to accurately measure low flow. The bypass line shall consist of a meter, a small diameter double check assembly with test cocks and isolation valves. The bypass line double check valve shall have a single access cover, two independently operating modular poppet check valves, and top mounted test cocks. The assembly shall be an Ames 3000SS.

Materials

All internal metal parts: 300 Series stainless steel, Main valve body: 300 Series stainless steel, Check assembly: Noryl® Flange dimension in accordance with AWWA Class D. Noryl® is a registered trademark of General Electric Company.

Job Name _____ Contractor _____

Job Location _____ Approval _____

Engineer _____ Contractor's P.O. No. _____

Approval _____ Representative _____

Ames product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Ames Technical Service. Ames reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Ames products previously or subsequently sold.

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